

REMARKS

In view of the Examiner's proposed amendments, Applicants request that the Examiner enter the foregoing amendments and consider the following remarks.

Please cancel claims 1-40.

Claim 41 has been amended and Claims 42-69 have been added.

In the amended claims, all the product claims have been cancelled and the claims have been limited to methods for the detection and the decontamination of soil, fluid and individuals contaminated with uranium using the calmodulin uranium-chelating peptides.

Independent claim 41 (method for the decontamination of soil or fluid contaminated with uranium) has been amended as requested by the Examiner (see detailed description of the amendments to claim 41 below).

Independent claim 55 (method for the detection of soil or fluid contaminated with uranium) which correspond to the subject matter of the elected Groups V-VI (claims 24, 25, 33, 34, 35) has been added as agreed with the Examiner.

Independent claim 67 (method for the decontamination of individuals contaminated with uranium) has been added based on the description Page 13, lines 6-13.

Claim 41 has been amended to replace the term "water" with "fluid." Replacement of the expression "soil or water" relative to the detection and the decontamination of uranium disclosed in the present invention by "soil or fluid" because the invention as disclosed in the overall specification is not limited to "soil and water" but is directed to the environment and the body of the contaminated individuals (page 1, lines 23-35; page 5, lines 4-11). The description of the invention discloses that the environment and the body of the contaminated individuals encompasses soil and fluid (page 6, lines 37-38; page 15, lines 38-39. Fluid encompasses water (page 1, line 5; page 5, line 10; page 12, line 31; page 13, line 1; page 16, line 5), aqueous medium (page 2, line 35) in particular biological medium (page 2, line 35; page 5, line 7; page 12, lines 31-32) like a body fluid (page 12, line 32).

Addition of the Independent claim 67 (method for the decontamination of individuals contaminated with uranium) which relates to the single inventive concept as defined above and is supported by the description of the claimed invention (see in particular page 7, lines 10-12 and page 13, lines 6-13 of the present application).

Dependent claims (claims 42-54, 56-66 and 68-69) incorporating the subject matter of the initial product claims have been introduced as indicated in the Table below.

Amended claim 41

The definition of the polypeptide reagent has been reformulated to specify that the polypeptide comprises a helix-loop-helix structure because this feature is an essential feature of the claimed polypeptide (see claim 1 and the corresponding part of the specification page 7, lines 13-15). Therefore amended claim 41 specifies that the loop is flanked at both ends by an alpha helix.

A SEQ ID NO: has been introduced for the generic calmodulin loop has requested by the Examiner. The amended claim 41 specifies four SEQ ID NO: for the calmodulin loop (SEQ ID NO: 13, 14, 15, 16) because the calmodulin comprises four loops, one in each of the four helix-loop-helix structures forming the four calcium binding sites (sites I to IV; see page 5, line 29 to page 6, line 13 of the specification).

Due to the introduction of the calmodulin loop sequence in the claim, the positions of the mutated residues which were defined initially by reference to the complete calmodulin sequence are now defined by reference to the sequence of the calmodulin loop (SEQ ID NO: 13 to 16).

D20, D22 and D24 (site I) has been replaced with D1, D3 and D5 since SEQ ID NO: 13 is the sequence from positions 20 to 31 of P02593 (see figure 1 attached).

D56 and D58 (site II) has been replaced with D1 and D3 since SEQ ID NO: 14 is the sequence from positions 56 to 67 of P02593 (see figure 1 attached).

D93 and D95 (site III) has been replaced with D1 and D3 since SEQ ID NO: 15 is the sequence from positions 93 to 104 of P02593 (see figure 1 attached).

D129, D131 and D133 (site IV) has been replaced with D1, D3 and D5 since SEQ ID NO: 16 is the sequence from positions 129 to 141 of P02593 (see figure 1 attached).

The recitation “at least one mutation to neutral residues” has been replaced with “one or more mutations to neutral residues” since the description and the claims (claim 3) clearly indicates that one, two or the three aspartic acid residues from the loop may be mutated to neutral residues.

As amended claim 41 specifies that the polypeptide comprises “one or more calmodulin loops” based on the description and the claims (claim 17) which discloses that the polypeptide may comprise several calmodulin loops.

Other claims

Support for the other claims is indicated in the Table below:

Claims	Support in the Application as originally filed
42	Claim 3
43	Claim 4; page 8, lines 31-38 and page 9, lines 13-21
44	Page 9, lines 4-12
45	Claim 5
46	Claim 5
47	Claim 6 and SEQ ID NO: 17 and 18; F19 and V35 in P02593 are at positions 13 of SEQ ID NO: 13 and 4 of SEQ ID NO: 14, respectively (see figure 1 attached)
48	Claim 10
49	Claim 17
50	Claim 19
51	Claim 20 and page 9, lines 13-21
52	Page 15, line 31 to page 16, line 6
53	Page 15, line 31 to page 16, line 6
54	Claim 41, page 5, line 7
55	Claims 24, 25; Page 1, lines 23-35; Page 5, lines 4-11; Page 12, lines 26-34
56	Claim 4; Page 9, lines 4-12
57	Claim 7
58	Claim 8
59	Claim 9 and SEQ ID NO: 13 and 17; A15, F16, and T26 in P02593 are at positions 9 and 10 of SEQ ID NO: 13 and 9 of SEQ ID NO: 17, respectively (see figure 1 attached)
60	Claim 10
61	Claims 11-12
62	Claim 13
63	Claim 14
64	Claim 22
65	Claim 23
66	Page 12, lines 31-32
67	page 7, lines 10-12 ; Page 13, lines 6-13
68	Claim 15
69	Claim 16

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of

this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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Annex II : Human calmodulin sequence

Ala Asp Gln Leu Thr Glu Glu Gln Ile Ala Glu Phe Lys Glu Ala Phe
1 5 10 15

Site I: Helix (7-19)

Ser Leu Phe Asp Lys Asp Gly Asp Gly Thr Ile Thr Thr Lys Glu Leu
20 25 30

Site I: Loop (20-31)

Gly Thr Val Met Arg Ser Leu Gly Gln Asn Pro Thr Glu Ala Glu Leu
35 40 45

Site I: Helix (32-38)

Gln Asp Met Ile Asn Glu Val Asp Ala Asp Gly Asn Gly Thr Ile Asp
50 55 60

Site II: Helix (45-55)

Site II: Loop (56 to 67)

Phe Pro Glu Phe Leu Thr Met Met Ala Arg Lys Met Lys Asp Thr Asp
65 70 75 80

Site II: Helix (68-78)

Ser Glu Glu Glu Ile Arg Glu Ala Phe Arg Val Phe Asp Lys Asp Gly
85 90 95

Site III: Helix (79-92)

Asn Gly Tyr Ile Ser Ala Ala Glu Leu Arg His Val Met Thr Asn Leu
100 105 110

Site III: Loop (93 to 104)

Site III: Helix (105-111)

Gly Glu Lys Leu Thr Asp Glu Glu Val Asp Glu Met Ile Arg Glu Ala
115 120 125

Site IV: Helix (118-128)

Asp Ile Asp Gly Asp Gly Gln Val Asn Tyr Glu Glu Phe Val Gln Met
130 135 140

Site IV: Loop (129-140)

Site IV: Helix

(118-128)

Met Thr Ala Lys

145

(141-147)

FIGURE 1 : HUMAN CALMODULIN SEQUENCE SWISSPROT P02593

- SEQ ID NO: 13 DKGDGDTITTKE
- SEQ ID NO: 14 DADGNNTIDFPE
- SEQ ID NO: 15 DKDGNGYISAAE
- SEQ ID NO: 16 DIDGDGQVNYYEE
- SEQ ID NO: 17 EQIAEFKEAFSLF
- SEQ ID NO: 18 LGTVMRS
- SEQ ID NO: 19 EAELQDMINEV
- SEQ ID NO: 20 FLTMMARKMKD
- SEQ ID NO: 21 TDSEEEIREAFRWF
- SEQ ID NO: 22 LRHVMTN
- SEQ ID NO: 23 DEEVDEMIREA
- SEQ ID NO: 24 FVQMMTA